

Notice of Allowability

Application No.

10/661,195

Examiner

Melissa Austin

Applicant(s)

GOEBEL, STEVEN G.

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to phone call from Applicant's Representative 6/7/2005.
2. ☒ The allowed claim(s) is/are 1-30.
3. ☒ The drawings filed on 14 March 2005 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jeremy Plenzer (for Ryan Massey) on 9 June 2005.

The application has been amended as follows:

Claim 1 has been replaced with:

1. A fuel cell, comprising:

a pair of membrane electrode assemblies (MEAs) separated from each other by a distance, each MEA having an anode side and a cathode side;

a bipolar plate assembly located between the anode side of one of the pair of MEAs and the cathode side of the other of the pair of MEAs, the bipolar plate assembly having:

a first sub-plate with a flow channel which is open to the anode side of the one of the pair of MEAs and a land region adjacent to said flow channel in said first sub-plate;

a second sub-plate with a flow channel which is open to the cathode side of the other of the pair of MEAs and a land region adjacent to said flow channel in said second sub-plate, the first sub-plate and the second sub-plate being nested together to

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form a coolant flow channel between the first and second sub-plates, one of said land region adjacent to said flow channel in said first sub-plate and said land region adjacent to said flow channel in said second sub-plate having a width substantially greater than a width of said flow channel in the other of said first sub-plate and said second sub-plate.

Claim 21 has been replaced with:

21. A fuel cell according to Claim 1, wherein one of said land region in said first sub-plate and said land region in said second sub-plate has a width [[at least]] about twice as large as a width of said flow channel of the other of said first sub-plate and said second sub-plate.

Claim 22 has been replaced with:

22. A fuel cell according to Claim 21, wherein one of said land region in said first sub-plate and said land region in said second sub-plate has a width [[at least]] about three times as large as a width of said flow channel of the other of said first sub-plate and said second sub-plate.

Claim 23 has been replaced with:

23. A fuel cell according to Claim 21, wherein one of said land region in said first sub-plate and said land region in said second sub-plate has a width [[at least]] about twice

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as large as a width of said flow channel of the other of said first sub-plate and said second sub-plate and is adapted to house at least two coolant channels therein.

Paragraph [0027] of specification has been replaced with:

(0027) Referring to FIG. 5, another alternative preferred embodiment of a bipolar plate assembly 260 of the present invention is illustrated. In this embodiment, the upper sub-plate 262 is formed with a series of hydrogen channels 266 spaced relatively far apart; forming relatively wide land regions 267, 269. The lower sub-plate 264 includes a pair of narrower channels that nest between the hydrogen flow channels 266 in the wider channels 270 of the upper sub-plate created by the wide land regions 267. This allows three separate channels 268, 270, 268 to be formed in this area when the sub plates 262, 264 are nested together. The two of these channels 268 which are open to the cathode side of the MEA provide oxygen flow paths. The third channel 270 is confined between the two sub-plates 262, 264 and provides a coolant flow path 270. In order to accommodate the three channels 268, 270, 268, the land regions 267 are generally the width of the three channels 268, 270, 268 combined. The hydrogen flow path 266 is provided adjacent to these three flow paths which is open to the anode side of the MEA. [[This configuration also allows the diffusing distance for the cathode side to be similar to that of a conventional configuration.]]

Allowable Subject Matter

2. Claims 1-6 and 21-30 are allowed.

3. The following is an examiner's statement of reasons for allowance: the prior art of record neither teaches or suggests a bipolar plate assembly located between the anode side of one of the pair of MEAs and the cathode side of the other of the pair of MEAs, the bipolar plate assembly having: a first sub-plate with a flow channel which is open to the anode side of the one of the pair of MEAs and a land region adjacent to said flow channel in said first sub-plate; a second sub-plate with a flow channel which is open to the cathode side of the other of the pair of MEAs and a land region adjacent to said flow channel in said second sub-plate, the first sub-plate and the second sub-plate being nested together to form a coolant flow channel between the first and second sub-plates, one of said land region adjacent to said flow channel in said first sub-plate and said land region adjacent to said flow channel in said second sub-plate having a width substantially greater than a width of said flow channel in the other of said first sub-plate and said second sub-plate.

4. The 35 U.S.C. 102 and 35 U.S.C. 103 art rejections of the final rejection of 18 May 2005 are **withdrawn**. The primary reference, Iwai et al. (WO 03/050905 A2, published 19 June 2003), does not qualify as prior art under 35 U.S.C. 102 in light of the Declaration under 37 C.F.R. § 1.131 (swearing behind 30 May 2002) filed by applicant 14 March 2005.

5. The objection to the specification, objection to the claims, and 35 U.S.C. 112 rejections of the final rejection of 18 May 2005 are overcome by the above examiner's amendment.

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Austin whose telephone number is (571) 272-1247. The examiner can normally be reached on Monday - Thursday, alt. Friday, 7:15 AM - 4:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mja
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